



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,130	04/24/2001	Isao Nishimura	206525US0	4417

22850 7590 06/05/2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

HAMILTON, CYNTHIA

ART UNIT PAPER NUMBER

1752

DATE MAILED: 06/05/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/840,130

Applicant(s)

NISHIMURA ET AL.

Examiner

Cynthia Hamilton

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6,8,9 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) 1-3,12 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-6,8,9,14 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-6,8,9 and 12-15 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### **DETAILED ACTION**

1. Applicants have amended claim 4 such that it is exactly the same as originally presented claim 7. Claim 7 has been cancelled. Thus, claim 4 is in the form of an originally presented claim. However, the limit in claim 7 of the barrier rib having a "trapezoidal cross sectional form with the longer top side than the bottom side and an angle formed by a straight line connecting the upper pattern edge and the lower pattern edge and the top side of 15 to 75°" was not part of any other claim but 7 upon first examination. Thus, this is a new limit in claims 5-6 and 8-9. Claims 12 and 13 have been newly amended to be dependent upon claim 4. Claims 14-15 have been newly added. Claim 14 presents a heretofore unconsidered limit of "said angle is from 40 to 50°" in reference to claim 4, and claim 15 is drawn to a heretofore unclaimed EL display element dependent upon the barrier ribs of claim 5. Thus, only claim 4 represents an invention present for examination in the last Office Action.

2. The examiner accepts applicants' assertion that an "EL display element" is well known in the art to be a term meaning an electroluminescent display element. The only other use of EL found in the related art was for ethyl lactate. The examiner believes no confusion would exist in the mind of a worker of ordinary skill in the art as to whether ethyl lactate or electroluminescent was meant by EL in this application. Rejections based on clarity are withdrawn in view of applicant's clarification.

3. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The barrier rib of claim 8 is now comprised of "a volatile component generated by heating from 25°C to 200°C in an amount of 10% or less of the weight of the barrier rib." The

Art Unit: 1752

examiner notes that heating the rib from a temperature of 25° to a temperature of 200°C is not clearly a step in making the barrier rib thus it is not clear how the process step is part of the rib. It is not clear whether the volatile component is inclusive of the addition of volatile components after formation, is inclusive of only those volatile components that may have been generated in some fashion in making the barrier rib or is inclusive of components that were generated by heat, i.e. made, before addition to the rib in the range set forth. The examiner does recognize that 10% or less includes 0% of this component. The examiner notes that this is not a range of 25° to 200° C but a heating step of 25°C to 200°C. . It is not clear when this heating occurs and how the volatile component becomes part of the barrier rib.

4. Rejections based upon Iguchi et al and original claim 7 are withdrawn. The examiner misinterpreted the meaning of "pitch" in the reference. It referenced periodicity and not slant of the ribs formed. Thus, there is no disclosure in Iguchi et al to making trapezoidal ribs.

5. The examiner notes that claims 4-6 and 8-9 and 14-15 reference upper pattern edge and lower pattern edge of the barrier rib however in view of no description of which side is lower or upper all ribs that are trapezoidal with an angle of 15 to 75° from one edge to another are considered to fit the limit set forth. Claims 4-6, 8 and 14 do not require anything but a rib is present. There is no requirement for a substrate on top or underneath the rib. There is no requirement that the formation of the rib be from exposure through a transparent substrate or on a surface opposite of such a substrate if present, i.e. is the pattern formed from the backside, thus being making the upper pattern edge that next to any substrate present? Applicants are allowed to use any terminology they wish, but the examiner is required to give the terms used the

Art Unit: 1752

broadest reasonable interpretation. She has done this in the original rejections of claim 7 and does so below.

6. Claims 4, 8 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tokai et al (US 6,482,575 B2) as optionally evidenced by Briney et al (4,485,167): The photoresists of Tokai et al are used to form tapered barrier ribs and use aqueous base soluble binders because sodium carbonate aqueous base developer is used to form the image of the rib master. In Tokai et al, see particularly abstract, figures col. 2, 3, 5 and Examples. In Figure 13 a barrier rib that was made from a master rib pattern made from a photosensitive material as set forth in col. 9-10 has the angle found in the instant claims. Angles at a tilt of 15 to 25° are referenced. The upper pattern edge of the rib is the edge near the PDP rear glass substrate. Since there is no description as to what is up or down in the instant claims, either side can be so. The rib of Tokai et al is "upperwardly tapered". The taper of the instant barrier rib is claimed. The examiner notes with respect to Tokai et al that applicants do not require the instant barrier rib be the imaged polymerized photosensitive composition. The requirement is that the barrier rib is "formed from a radiation sensitive resin composition". In Tokai et al, the rib is formed from such because the rib is formed from a master rib pattern that is made with a radiation sensitive resin composition. To form has several meanings according to the American Heritage Dictionary. One is 'To become formed or shaped'; another is 'To come into being; arise'; another is 'to assume a specified form, shape or pattern.' Thus, the instant barrier ribs are brought into being from the instant radiation sensitive resin composition or are shaped from it by using it to form a mold to shape the ribs of Tokai et al. Inherently the ribs formed in the mold of Tokai et al are also tapered and are ribs inherently

Art Unit: 1752

useful as ribs in an EL device. The examiner does note that on page 36 of the instant application a specific kind of relationship of barrier rib to inversely tapered form is described with reference to where the EL medium is to be deposited from "above". Reference here is made to "an irradiation direction" and "inversely tapered lower portion". However, all of these references are to actions and reference points that are not part of the claimed invention. During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification." In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969). The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. In re Cortright, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999). While the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); MSM Investments Co. v. Carolwood Corp., 259 F.3d 1335, 1339-40, 59 USPQ2d 1856, 1859-60 (Fed. Cir. 2001). It is only when the specification provides definitions for terms appearing in the claims that the specification can be used in interpreting claim language. In re Vogel, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970). See particularly MPEP 2111.01. The examiner

Art Unit: 1752

has tried to do this with applicants' claims. She believes both the barrier rib mask with a taper of 25° to 45° as disclosed in col. 9 and Example 1 and barrier ribs with a taper of about 15° to about 25° of Tokai et al still anticipate the instant barrier ribs with respect to instant claims 4, 8 and 14. There is no disclosure to colorant in the photosensitive materials in Tokai et al which read upon the instant composition. This composition in Tokai et al is set forth at the bottom of col. 8 wherein the dry resist is composed of an acrylic resin, a photopolymerizable monomer and additive and the like. The binder must be alkali soluble because in col. 9 lines 43-46, an alkali developer is used to spray away the uncured material. The material must include a radiation sensitive polymerization initiator as an "additive" to polymerize the monomer at the speed required. The resist used as an example is ALPHO NIT600. In the alternative, any known photoresist with the components set forth in col. 8 wherein a photopolymerization initiator was present, would have been prima facie obvious to use as they are well known in the art as evidenced by their use in systems of Briney et al which are comprised of the same components of an acrylic binder and a polymerizable monomer. Briney et al is also cited to show that a photopolymerization initiator would be expected to be present as an additive in the ALPHO NIT600 dry resist and a worker of ordinary skill in the art would expect it to be there. In Briney et al, see particularly the Abstract and Background ART and Disclosure of the Invention.

7. Other than the Figure 1 drawn to prior art, there is no indication in Suzuki (6,132,937) that tapered barrier ribs are part of the teaching. There is no indication especially of a particular angle of taper as required now by instant claims 4-6, 8-9 and 14-15. Thus, rejections in view of Suzuki over original claim 7 are withdrawn and as such no rejections are made over these claims which incorporate the limitations of original claim 7.

Art Unit: 1752

8. Applicant's arguments filed March 24, 2003 have been fully considered but they are not persuasive. Applicants argue because Tokai et al does not pertain to an EL element then it is not applicable to the instant invention. Applicants argue that the inversely tapered form of the barrier rib sought in the instant application is not found in Tokai et al. The examiner notes that the EL element is only part of the element of claims 9 and 15. Claims 4 and 8 and 14 are drawn only to the barrier rib. That the barrier rib is intended for use in an EL display element does not require the display element be part of the barrier rib. The words "for an EL display element" in the preamble do not act to require an EL display element be attached to the rib claimed only that the rib can be so used. The examiner believes such is true of at least the rib master formed in Tokai et al and inherently so of the actual rib formed in Tokai et al. As to the taper angle, the examiner has already addressed applicants' lack of sufficient claim language to give "upper pattern edge" and "lower pattern edge" clear exclusion of the tapered barrier ribs of Tokai et al or the "inversely tapered" ribs applicants argue are required. Without reference in the claim language or sufficient definition with respect to the claimed barrier rib taper language in the original specification to the substrate that is actually part of the EL element and the position of the rib with respect to what is up or down with respect to the position of the organic EL medium deposited to form an EL display element the examiner cannot read into the claimed invention structures that are not there. The rejection in view of Tokai et al stands as originally made and now modified with explanation. As to the volatile component limitation of instant claim 8, the examiner holds it is not inherently present in the rib of Tokai et al.



Art Unit: 1752

9. Because of the newly found Tanamura et al (6,306,559 B1) and its citation against claim 4, i.e. originally presented claim 7, this office action is not made final. The new rejections follow.

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(d) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1752

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4-6, 8-9, 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanamura et al (6,306,559 B1). Examples 2, 5 and 6 of Tanamura et al make ribs and devices that anticipate the ribs and elements of instant claims 4-6, 8-9, and 14-15. The "Organic polymer substance" of Tanamura et al is the instant alkali soluble binder as evidenced by the alkali developer used to wash away the unexposed portion of the photopolymerizing resin composition of Tanamura et al in said Examples. In Tanamura et al, the deposition preventing layer is the rib forming layer of the instant disclosure. In Tanamura et al, Examples 2, 5 forms a barrier rib of a reverse-tapered cross-section of about 50 ° which is within that of instant claim 14 as well as the range of instant claims 4-6, 8-9 and 15. The EL devices of Tanamura et al are held to inherently not have a volatile constituent beyond that limit set in instant claim 8. In Tanamura et al, also see particularly the Abstract, Figure 1 (a), Figure 2, Figure 3, and Figure 6 as well as col. 6, lines 50-59, col. 15-16 and col. 10-15 in reference to the photosensitive resin composition disclosed by Tanamura et al.

13. Claims 4-6, 8-9, 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanamura et al (6,306,559 B1). Examples 2, 5 and 6 of Tanamura et al make ribs and devices that anticipate the ribs and elements of instant claims 4-6, 8-9, and 14-15. The "Organic polymer substance" of Tanamura et al is the instant alkali soluble binder as evidenced by the alkali developer used to wash away the unexposed portion of the photopolymerizing resin composition of Tanamura et al in said Examples. In Tanamura et al, the deposition preventing layer is the

Art Unit: 1752

rib forming layer of the instant disclosure. In Tanamura et al, Examples 2, 5 forms a barrier rib of a reverse-tapered cross-section of about  $50^\circ$  which is within that of instant claim 14 as well as the range of instant claims 4-6, 8-9 and 15. The EL devices of Tanamura et al are held to inherently not have a volatile constituent beyond that limit set in instant claim 8. In Tanamura et al, also see particularly the Abstract, Figure 1 (a), Figure 2, Figure 3, and Figure 6 as well as col. 6, lines 50-59, col. 15-16 and col. 10-15 in reference to the photosensitive resin composition disclosed by Tanamura et al. What is not clearly found in Examples 2,5 and 6 in Tanamura et al is the broader scope of all alkali soluble resins as binders. However, in col. 13 of Tanamura et al in lines 35-54, a list of organic polymer binders are listed for optional use in their compositions. In view of an alkali developer being used in the examples of Tanamura et al, a worker of ordinary skill in the art would have considered the use of a polymeric binder that would be alkali developable because it is the nature of the binder as opposed to the polymerized monomer present in the imaged material that determines the nature of developer to be used. Thus, with respect to instant claims 4-6, 8-9, 14-15, the elements and deposition preventing layers of Tanamura et al make prima facie obvious the barrier ribs and EL elements of applicants disclosure

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tanamura et al (JP2001015267A and Jp2000286057A) are cited as documents derived from the priority applications cited in Tanamura et al (US 6306,559 B1). No English translations are now available of these documents. Nagayama et al teach making the inverse taper insulating layers in EL devices which are like the instant barrier ribs. There is no specificity to the photoresists used.

Art Unit: 1752

15. Claims 1-3 and 12-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cynthia Hamilton whose telephone number is (703) 308-3626. The examiner can normally be reached on Monday-Friday, 9:30 am to 5:00 pm.*

*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on (703) 308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.*

*Any inquiry of a general nature or relating to the status of this application should be directed to the 1700 receptionist whose telephone number is (703) 308-0661.*

Cynthia Hamilton  
June 2, 2003

  
CYNTHIA HAMILTON  
PRIMARY EXAMINER